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Lucent Two: A Breathable Hooded Rain Jacket

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Keywords: Functional design, running apparel, water repellant, pattern making

Measurements: Bust: 35"; Waist: 32"; Hip: 36."

Context: The purpose of this design, *Lucent Two*, was to protect wearer's while running in inclement weather while providing comfort and breathability throughout the garment. When running in humid climatic conditions (before, during, or after rain), many rain jackets cling to the wearer's skin and become very uncomfortable. Runners, in humid conditions, have to contend with moisture not only from the environment but also moisture produced from their body. Many lightweight rain jackets are made of coated polyester or nylon fabrics that protect from rain but do not release the wearer's trapped body moisture which results in an unfavorable clammy micro-climate. The aim of *Lucent Two* was to create a breathable and lightweight apparel solution.

Lucent Two is the second in a sequence of jackets produced by the designer that explores using silicone-impregnated ripstop nylon for protection against rain. Previously, the designer explored an aesthetic-focused rain jacket in the *Lucent* collection. The inspiration for the aesthetics of both jackets in the *Lucent* collection was drawn from the bold design and innovations of the Stella McCartney for Adidas collections. For the design of *Lucent Two*, the fabrication of the garment was further inspired by fine art images by Nick Veasey who creates x-rays of fashion items, among other things and has an exhibition at V&A (Veasey, 2017). Christopher Raeburn's iconic collections of "windcheaters" made of repurposed parachute fabric where the seams were visible through the fabric (Raeburn, 2017). In 2013, Nike unveiled a similar ad campaign where their brightly-colored rain apparel was back-lit, resulting in a stained-glass effect of light passing through the fabric of the garment (Unknown, 2015). The current design is a synthesis of inspiration from previous work in combination with new explorations by the designer.

Functional Innovations: Runners' technical and aesthetic needs during runs in balmy running conditions were considered in the design features of the rain jacket. This performance running piece protects against rain through the use of silicone-impregnated ripstop nylon used as the outer shell. Because this fabric does not breathe well, multiple strategies were used to improve ventilation. The garment is constructed with two layers where the outer layer on the upper body floats freely on top of an underlayer made of mesh. The lower portion of the jacket is connected to the mesh layer by a seam under the bust. For any area that the garment may come in contact with bare skin, such as arms, chest, upper back, a mesh lining was used to keep the garment's outer shell from touching the wearer's skin. The mesh provides a space between the shell skin where air can circulate, helping maintain the wearer comfortable. Furthermore, the two-layer construction creates a horizontal vent which goes around the entire body to release trapped air and body moisture. Rain falling from the sky or blowing from the side cannot enter the jacket because the nylon portion on the upper-body has a 1.5-in. overlap with nylon on the lower body. Because the upper body and lower body is only attached to the power mesh lining, the fit model experienced increased range of motion in the arms, shoulders, and torso. And, the lining allowed the outer shell to move along the skin without drag. The mesh liner and nylon exterior shell feature continues to the sleeves of the garment. The cuff of the inner mesh sleeve is made of a polyester/spandex jacquard knit and has thumbholes to keep the inner sleeve from hiking up. The exterior sleeve has a relaxed fit to move air, but the sleeve can be

cinched with Velcro at the cuffs. A roomy hood with cord locks can be concealed in the collar. The plackets, which hides the front zipper and two zippered front hand pockets, and the pocket bags are made of the nylon shell fabric to protect valuables from rain and body moisture.

Aesthetics: The main aesthetic feature of the jacket is its color. The intention was to create a jacket with a strong visual impact rooted in emotional responses to color, especially, the effect of layering different translucent blue shades to create a deep depth of color, which may bring pleasure to the wearer. The designer built up the color on the hood, front, and center back by sandwiching navy between two layers of turquoise to bring up the navy color from the lower portion of the garment to the upper body in a subtle way. On the lower body, color is built up by using one layer of turquoise and one layer of navy on the lower front side panels and in the pocket bags. The layering of color is most evident when the garment is back-lit as in the detail photograph. A coordinating running short was also created as a supplementary garment to enrich the jacket, although it is noted, that the jacket is the main garment featured in this scholarship. The running short has a wrap-around pattern which allows a total range of motion and includes the mesh used in the jacket as trim. The fabric is a nylon twill with a brushed face, giving it a matt texture. The complimentary colors of the print create a sharp contrast to the blue shades in the jacket.

Process: Basic block patterns were created through draping on an *Alvanon* Missy Curvy (size 6) dress form. The blocks were used as the basis for all further flat-pattern manipulations including adding fullness, removing darts, and creating style lines. The jacket has 35 different pattern pieces. Seam samples were developed to identify appropriate construction methods because seam finishes used in the previous jacket did not allow the garment to drape appropriately. Because this design was composed of mostly straight lines (versus mostly curved lines in the last coat), lapped seams were deemed appropriate. However, single-turned and double turned hems along curved edges were abandoned for facings on the cuffs and bottom hems to produce a clean finish. A sample garment was created to analyze fit on the dress form before cutting the fashion fabric. Overall, *Lucent Two* synthesizes previous design work, functional solutions, exciting, attractive aesthetic features, with the rigorous process and high-quality methodological execution to create a functional rain jacket that protects and is comfortable for runners in humid or wet conditions.

Design Contribution: Unlike many rain jackets available on the market, *Lucent Two* pushes the boundaries of function and aesthetics of a protective garment. This design as scholarship builds on past work by the designer to address a sophisticated comfort problem experienced by runners. This design concept strengthens the point that functional design can be beautiful and to push activewear design to the next level; serious technical solutions should be combined with innovative design details that bring pleasure to the wearer.

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